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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/549,328	04/13/2000	Shawn P. McAllister	1400.4100231	7384

25697 7590 08/14/2006

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EXAMINER	
BLAIR, DOUGLAS B	

ART UNIT	PAPER NUMBER
2142	

DATE MAILED: 08/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/549,328	MCALLISTER ET AL.	
	Examiner	Art Unit	
	Douglas B. Blair	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 27 April 2006.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-62 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-62 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Request for Appeal Conference, filed 4/27/2006, with respect to the rejection(s) of claim(s) 1-62 under 35 U.S.C. 102(e) as being anticipated by Masuda have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of U.S. Patent Number 6,560,654 to Fedyk et al. and U.S. Patent Number 6,424,620 to Nishihara.

2. At various points during the prosecution of this application, the applicant has argued that the prior art does not teach the concepts of a "control plane", a "routing plane", and a "signal plane". However, the applicant's specification never defines these terms and they are not commonly used in the art as a search of U.S. patents for the terms "control plane", "routing plane", and "signal plane" used together only turned up documents published by the applicant. If the applicant wishes to persist in arguing that the prior does not teach these terms, it is requested by the Examiner that the applicant specifically point out how these terms are to be interpreted in light of the applicant's specification or provide some evidence that their meaning was well known in the art at the time of the applicant's invention, in order to further prosecution. Otherwise, the examiner has no choice other than to interpret the claims broadly.

3. The examiner concedes that Masuda does not anticipate "control plane" congestion after carefully examining the applicant's specification. As best understood by the examiner, "control plane" congestion is congestion caused by call setup message, a concept not explicitly taught by Masuda. Support for this interpretation is found in the applicant's background discussion. The

examiner can find no hint of a definition, however, for the terms "routing plane" and "signal plane".

4. After carefully reviewing the prosecution of this application, the examiner believes that the previously applied Fedyk reference shows the claimed invention. The applicant had argued previously, in a response filed on 11/8/2004 that Fedyk does not anticipate the applicant's claimed invention because: (a) Fedyk does not teach control plane congestion and applicant points to page 14, lines 16-18 of the specification to support this assertion; (b) the examiner's interpretation completely ignores the presence of the term "routing plane" and "signaling plane"; (c) Fedyk fails to disclose a limitation of "wherein the congestion notification includes a congestion level"; and (d) Fedyk fails to disclose waiting a predetermined amount of time based on a congestion level as claimed in claims 15 and 36.

5. As to point (a), page 14, lines 16-18 of the applicant's specification is not a definition of the "control plane" because it merely states that "IP congestion indicates data plane congestion, not control plane congestion that could be due to link congestion, but could also be due to congestion on connection processors", which does not define the "control plane" but only states that the "control plane" does not include IP congestion. The examiner believes that Fedyk discloses "control plane" congestion because in col. 5, lines 13-30, Fedyk describes a feedback message sent to a source node in response to a setup message. The feedback message is considered the congestion message. The source node is considered an additional network element in the signaling network that utilizes the notification. The step message of Fedyk is explicitly disclosed as a "control plane" message in col. 5, lines 11-12.

6. As to point (b), the "routing plane" is considered any of the devices shown in Figure 1. As stated previously, if the applicant does not like this interpretation, the applicant should explain how "routing plane" should be interpreted.

7. As to point (c), the feedback message indicates the "congestion level".

8. As to point (d), in col. 6, lines 18-29, the source node can transmit data upon expiration of a time interval, so clearly the congestion information is no longer relevant and removed from the table described in col. 5, lines 45-61.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-6, 8-25, and 27-62 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Number 6,560,654 to Fedyk et al..

11. As to claim 20, Fedyk teaches a congestion notification processor, comprising: a processing module; memory operably coupled to the processing module, wherein the memory stores operating instructions that, when executed by the processing module, cause the processing module to perform functions including: detecting control plane congestion at a network element in a signaling network (col. 5, lines 13-30, each intervening node detects whether the parameters of the setup message can be met.); generating a congestion notification corresponding to the

control plane congestion (col. 5, lines 13-30, the feedback message); providing the congestion notification to at least one additional network element in the signaling network, wherein the at least one additional network element utilizes the congestion notification for routing control traffic around the network element at which the control plane congestion has been detected (col. 6, lines 4-18, if the feedback message is negative then another path is selected).

12. As to claim 21, Fedyk teaches the congestion notification processor of claim 20, wherein the memory stores operating instructions that, when executed, cause the processing module to provide congestion via routing plane within the signaling network (col. 5, lines 13-30 and Figure 1, the devices in Figure 1 are considered a routing plane and the network is a signaling network).

13. As to claim 22, Fedyk teaches the congestion notification processor of claim 21, wherein the memory stores operating instructions that, when executed, cause the processing module to provide the congestion notification via the routing plane such that the congestion notification is provided to neighboring network elements proximal to the network element (col. 5, lines 13-60).

14. As to claim 23, Fedyk teaches the congestion notification processor of claim 20, wherein the memory stores operating instructions that, when executed, cause the processing module to provide congestion notification via a signaling plane within the signaling network (col. 4, lines 9-37, the network in Figure 1 is considered a signaling plane).

15. As to claim 24, Fedyk teaches the congestion notification processor of claim 20, wherein the memory stores operating instructions that, when executed, cause the processing module to proceed the congestion notification in response to a received connection setup message generated by a source node in the network, wherein the at least one additional node includes the source node (col. 5, lines 13-60, the feedback message is relayed to the source).

16. As to claim 25, Fedyk teaches the congestion notification processor of claim 24, wherein the memory stores operating instructions that, when executed cause the processing module to provide the congestion notification via a signaling plane wherein the signaling network, wherein the congestion notification is provided to each network element along a path traversed by the connection setup message (col. 5, lines 13-60).

17. As to claim 27, Fedyk teaches the congestion notification processor of claim 20, wherein the signaling network is included in at least one of a packet-based communication network and a cell-based communication network (col. 4, lines 9-20).

18. As to claim 28, Fedyk teaches the congestion notification processor of claim 27, wherein the signaling network is a source routed control network (col. 4, lines 9-20).

19. As to claim 29, Fedyk teaches the congestion notification processor of claim 28, wherein the signaling network is included in an ATM network utilizing a Private Node Network Interface (PNNI) routing and signaling protocol (col. 3, lines 32-45).

20. As to claims 1-10, they feature the same limitations as claims 20-29 and are rejected for the same reasons as claims 20-29.

21. As to claim 30, Fedyk teaches the congestion notification processor of claim 22, wherein utilization of the congestion notification by the at least one additional network element further comprises at least one of: updating routing tables, generating a congestion database, propagating the congestion notification to additional elements in the network, and compiling statistics reflecting network performance (col. 5, lines 45-60).

22. As to claim 31, Fedyk teaches the congestion notification processor of claim 22, wherein the congestion notification includes a congestion level and wherein utilization of the congestion

notification further comprises reducing control traffic to the network element at which the control plane congestion has been detected, wherein an amount of reduction in control traffic to the network element is based on the congestion level (col. 5, lines 32-44).

23. As to claim 32, Fedyk teaches a connection processor, comprising: a processing module; memory operably coupled to the processing module wherein the memory stores operating instructions that, when executed by the processing module, cause the processing module to perform functions including: receiving a request to establish a connection in a communication network, wherein the request includes a destination (col. 5, line 13-30, the setup message); determining a first routing path for the connection based on the network parameters, wherein the network parameters include communication network topology information and congestion information corresponding to at least one previously received congestion indication (col. 5, lines 10-12 and lines 45-61); and sending a first connection setup message along the first routing path (col. 6, lines 4-22).

24. As to claim 33, Fedyk teaches the connection processor of claim 32, wherein the memory stores additional instructions that, when executed by the processing module, cause the processing module to perform the additional functions of: receiving an indication of control plane congestion at a congestion point along the first routing path (col. 5, lines 13-60, the feedback message); determining a second routing path for the connection using the network parameters and the indication of control plane congestion (col. 6, lines 4-22); and sending a second connection setup message along the second routing path (col. 6, lines 4-22).

25. As to claim 34, Fedyk teaches the connection processor of claim 33, wherein the processing module stores the network parameters in a table, and wherein memory stores

operating instructions that when executed, cause the processing module to add congestion information included in the indication of control plane congestion to the network parameters stored in the table (col. 5, lines 45-60).

26. As to claim 35, Fedyk teaches the connection processor of claim 34, wherein the memory stores operating instructions that, when executed, cause the processing module to remove the congestion information from the table after a predetermined time period (col. 6, lines 19-28).

27. As to claim 36, Fedyk teaches the connection processor of claim 35, wherein the congestion information includes a level of congestion, and wherein the predetermined time period is based on the level of congestion (col. 6, lines 19-28).

28. As to claim 37, Fedyk teaches the connection processor of claim 33, wherein the memory stores operating instructions that, when executed, cause the processing module to perform an additional function of relaying the indication of control plane congestion to at least one additional node in the communication network (col. 6, lines 4-22).

29. As to claim 38, Fedyk teaches the connection processor of claim 33, wherein the memory stores operating instructions that, when executed, cause the processing module to store congestion information included in the indication of control plane congestion (col. 6, lines 4-22).

30. As to claim 39, Fedyk teaches the connection processor of claim 33, wherein the indication of control plane congestion is received by the processing module via a routing plane (col. 5, lines 13-30).

31. As to claim 40, Fedyk teaches the connection processor of claim 33, wherein the indication of control plane congestion is received by the processing module via a signaling plane (col. 4, lines 9-37).

32. As to claims 11-19, the have the same limitations as claims 32-40 and are rejected for the same reasons as claims 32-40.

33. As to claim 41, Fedyk teaches a method for communicating control plane congestion information in signaling network, comprising: detecting control plane congestion at a network element (col. 5, lines 13-30); generating a congestion notification corresponding to the control plane congestion, wherein the congestion notification includes a congestion level (col. 5, lines 13-30); providing the congestion notification to at least one additional network element in the signaling network (col. 5, lines 13-30), wherein the at least one additional network element utilizes the congestion notification for reducing control traffic to the network element at which the control plane congestion has been detected, wherein an amount of reduction in control traffic to the network element is based on the congestion level (col. 5, lines 31-60, the level is considered negative or positive so the traffic by the source is reduced according to a negative or positive feedback message).

34. As to claim 42, Fedyk teaches a method for communicating control plane congestion information in a signaling network, comprising: detecting control plane congestion at a network element (col. 5, lines 13-30); generating a congestion notification corresponding to the control plane congestion (col. 5, lines 13-30); providing the congestion notification to at least one additional network element in the signaling network (col. 5, lines 13-30), wherein the at least one additional network element utilizes the congestion notification for performing at least one of: updating routing tables, generating a congestion database, propagating the congestion notification to additional elements in the network, and compiling statistics reflecting network performance (col. 5, lines 45-60).

35. As to claim 52, Fedyk teaches a congestion notification processor, comprising: a processing module; memory operably coupled to the processing module, wherein the memory stores operating instructions that, when executed by the processing module, cause the processing module to perform functions including: detecting control plane congestion at a network element in a signaling network (col. 5, lines 13-30, each intervening node detects whether the parameters of the setup message can be met.); generating a congestion notification corresponding to the control plane congestion (col. 5, lines 13-30, the feedback message); providing the congestion notification to at least one additional network element in the signaling network, wherein the at least one additional network element utilizes the congestion notification for routing control traffic around the network element at which the control plane congestion has been detected (col. 6, lines 4-18, if the feedback message is negative then another path is selected); such that scaled back amount of control traffic is sent to the network element at which the control plane congestion has been detected, wherein an amount of reduction in control traffic to the network element is based on the congestion level (col. 5, lines 13-60, the traffic to the network element where the congestion occurred is scaled back to zero when a negative feedback is received).

36. As to claim 53, it is rejected for reasons pointed out in the rejection of claim 24.

37. As to claim 54, Fedyk teaches the congestion notification processor of claim 52, wherein the congestion notification is provided to a source node and to the at least one additional network element in the signaling network in response to a received connection setup message generated by the source node, wherein the at least one additional network element utilizes the congestion notification for reducing control traffic to the network element at which the control plane congestion has been detected (col. 5, lines 13-30, the feedback message is sent through all of the

nodes used in the point-to-point link. By forwarding the feedback message, each node is utilizing the congestion to reduce control traffic).

38. As to claim 55, Fedyk teaches the congestion notification processor of claim 54, wherein the at least one additional network element comprises a network element along a path traversed by the connection setup message (col. 5, lines 13-30).

39. As to claim 56, it is rejected for the same reasons pointed out in the rejection of claim 41.

40. As to claim 57, Fedyk teaches the congestion notification processor of claim 52, wherein the operating instructions further cause the processing module to perform: maintaining the congestion information for a predetermined time period (col. 6, lines 18-29); and removing the congestion information after the predetermined time period (col. 6, lines 18-29).

41. As to claim 58, Fedyk teaches the congestion notification processor of claim 57, wherein the operating instructions further cause the processing module to perform the maintaining of the congestion information in a routing table (col. 5, lines 45-61).

42. As to claim 59, Fedyk teaches the congestion notification processor of claim 57, wherein the operating instructions further cause the processing module to perform the maintaining of the congestion information in a topology database (col. 5, lines 45-61).

43. As to claim 60, Fedyk teaches the congestion notification processor of claim 52, wherein the operating instructions further cause the processing module to perform: prioritizing traffic such that traffic of a priority is attempted to be routed through the network element at which the control plane congestion has been detected after the congestion notification has been provided (col. 4, line 61-col. 5, line 12 and col. 6, lines 18-29, Fedyk describes prioritizing traffic and

Fedyk teaches transmitting traffic though a network element in which control plane congestion has been detected after a time period).

44. As to claim 61, Fedyk teaches the congestion notification processor of claim 60, wherein the traffic of a priority further comprises traffic of a high priority (col. 4, line 61-col. 5, line 12).

45. As to claim 62, Fedyk teaches the congestion notification processor of claim 60, wherein the traffic of a priority further comprises traffic of a lower priority (col. 4, line 61-col. 5, line 12).

46. As to claims 43-51, they feature a method corresponding to that done by the congestion notification processor of claims 52-62 and are thus rejected for the same reasoning.

Claim Rejections - 35 USC § 103

47. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

48. Claims 7 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Number 6,560,654 to Fedyk et al. in view of U.S. Patent Number 6,424,620 to Nishihara.

49. As to claims 7 and 26, Fedyk teaches the subject matter of claims 1 and 20, respectively, however Fedyk does not explicitly teach distinguishing between node congestion and link congestion.

Nishihara teaches a congestion notification processor wherein the congestion indication includes at least one congestion parameter from the set of congestion parameters that includes: a congestion type that distinguishes between node congestion and link congestion, a congestion

location, and a congestion level (col. 17, lines 41-39, the BRM packet indicates whether congestion is caused by inside or outside blocking).

It would have been obvious to one of ordinary skill in the Computer Networking art at the time of the applicant's invention to combine the teachings of Fedyk regarding the detection of control plane congestion with the teachings of Nishihara regarding detecting congestion type because differing congestion types can be handled more efficiently by taking corresponding actions (Nishihara, col. 17, lines 50-67).

Conclusion

50. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Douglas B. Blair whose telephone number is 571-272-3893. The examiner can normally be reached on 8:30am-5pm Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3800.

Douglas Blair
DBB

ANDREW CALDWELL
SUPERVISORY PATENT EXAMINER